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## BOOKS.

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*Tables of Physical and Chemical Constants and Some Mathematical Constants.* By G. W. C. Kaye, B. A. (Cantab.), D. Sc. (Lond.), A. R. C. Sc. (Lond.), The National Physical Laboratory; late Sub-Lector in Physics, Trinity College, Cambridge, and T. H. Laby, B. A. (Cantab.), Professor of Physics, Wellington, N. Z.; formerly Exhibition of 1851 Scholar; Joule Student; and Research Exhibitioner, Emanuel College, Cambridge. Large 8vo. Flexible cloth back, vi+153 pages. Price, \$1.50. New York: Longmans, Green & Co.

A desideratum of every present-day physics teacher has been the satisfying of the need of an accurate, authoritative, and inexpensive set of physical and chemical tables for the laboratory. The book before us satisfies this need admirably. In this book, a half dozen pages are devoted to the various units,—absolute and derived. Then follows tables dealing, among other things, with terrestrial and astronomical constants, barometry, hydrometry, and densities, screws and wire gauges, elasticities and tensile strengths, viscosities, molecular constants and kinetic theory, critical data, diffusion, surface tensions, hygrometry, and vapor pressure.

In the pages on heat, considerable attention is given to present-day thermometry, much data concerning the melting and boiling point, standard temperatures, expansive coefficients, thermal conduction, the recent determinations of Joule's mechanical equivalent, specific and latent heats, black-body radiation, the solar constants, etc. The more recently determinant value for latent heat of steam is given, viz., 540.

In the same way, we find here the various constants in sound, light, electricity, magnetism, and radio-activity. About fifteen pages are devoted to the physical constants of chemical compounds. The book also contains 4-figure logs and anti-logs, 5-figure logs  $e-x$  and the more usual trigonometric functions with reciprocals and squares.

No physical nor chemical laboratory should be without these tables. They are absolutely indispensable to the wide-awake physics and chemistry teacher. F.

*Plane Geometry.* By C. A. Hart, Instructor in Mathematics, Wadleigh High School, New York City, and Daniel D. Feldman, head of the Department of Mathematics, Erasmus Hall High School, Brooklyn, N. Y., with the Editorial Coöperation of J. H. Tanner and Vergil Snyder, Professor of Mathematics in Cornell University. 8vo. Cloth, vii+303 pages. New York: American Book Co.

In addition to the usual theorems, demonstrations, and a large collection of exercises, human interest is added by a number of pictures of leading Geometricians, accompanied by brief biographical sketches. It will prove to be a very useful book in the hands of an enthusiastic teacher. F.

*Practical Algebra, Second Course.* By Joseph V. Collins, Ph. D., Professor of Mathematics, State Normal School, Stevens Point, Wisconsin. 8vo. Cloth, viii+303 pages. New York: American Book Co.

In the preparation of this second course, the author had the benefit of suggestions and criticisms from a number of teachers whose practical experience in the school room enable them to give valuable aid in the production of a second book in algebra.

Many of the features of the author's First Year Course have been retained in the Second Course. The book is well written and the presentation of the principles of algebra is clearly and forcefully put before the student's mind. F.

*Elementary Plane Geometry.* By John C. Stone, A. M., Head of the Department of Mathematics, State Normal School, Montclair, N. J., Co-Author of the Southworth-Stone Arithmetics, Stone-Millis Secondary Arithmetics, Algebras, etc., and James F. Millis, A. M., Head of the Department of Mathematics, Francis Parker School, Chicago, Co-Author of the Stone-Millis Secondary Arithmetics and Algebras. 8vo. Red cloth sides, viii+252 pages.

In this text, much is made of every-day practical problems as examples and exercises coming under application of theorems. Also the trigonometric functions are defined and used to a very limited extent.

On page 226, Dürer's construction of a pentagon appears as exercise 20. A figure is drawn and the student is asked to explain the construction and prove that this figure is a *regular* pentagon. We wonder how the authors expect this to be done. F.

*Engineering Applications of Higher Mathematics.* By V. Karapetoff, Part I. Problems on Machine Design. First Edition, first thousand. 8vo. xiv+69 pages. Price, 75 cents. New York: John Wiley & Sons.

The aim of this book is not intended to present the principles of the calculus to the student, but, rather, the author tells us, to enable an engineer to make better use of his higher mathematics in his work. To this end, he has taken up a brief treatment of loads on the inclined plane, friction in journals, friction in step bearings, carrying capacity in belts, torsion of shafts, and moments of inertia of flywheels. Under each head a number of problems are solved in detail. The book will be found helpful to the practical engineer who has limited time for more extensive study. F.

*Elements of Applied Mathematics.* By Herbert E. Cobb, Professor of Mathematics in Lewis Institute, Chicago. 12mo. Cloth, 274 pages. Price, \$1.00. Chicago: Ginn & Co.

"The idea that mathematics is a series of discrete subjects, each in turn to be studied and dropped without reference to the others, or to the mathematical problems to be met in the future, is fast being displaced by that which links arithmetic, algebra, geometry, and trigonometry in close relationship with each other, and connects all our mathematics with our work in the shops and laboratories.

Elements of Applied Mathematics is constructed upon this latter principle. The work outlined consists largely of lists of problems based on the student's preceding work in mathematics, illustrating the work in the shops and laboratories, and of simple experiments and exercises in the mathematics classroom, where the pupil, by measuring and weighing, secures his own data for numerical computations and geometrical constructions."

*First Year Algebra.* By William J. Milne, Ph. D., LL. D., President, New York State Normal College, Albany, N. Y. 8vo. Cloth, 320 pages. New York: The American Book Co.

This is a very excellent book for the beginner, stimulating and instructive. F.

*Brief Course in Analytical Geometry.* By J. H. Tanner, Professor of Mathematics, Cornell University, and Joseph Allen, Assistant Professor of Mathematics in the College of the City of New York. 12mo. Cloth and leather back, x+282+xxiv pages. New York and Chicago: The American Book Co.

This little book preserves the main features of the authors' *Elementary Analytical Geometry*, a book well adapted to elementary instruction in colleges. Those who have used *Elementary Analytical Geometry* and found it a little too comprehensive for the time at their disposal will want to try this briefer course by the same authors. F.